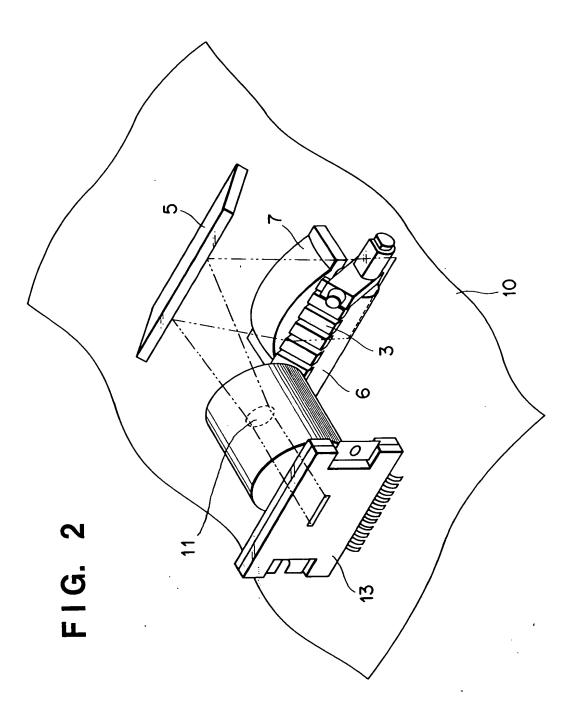


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F1G. 3

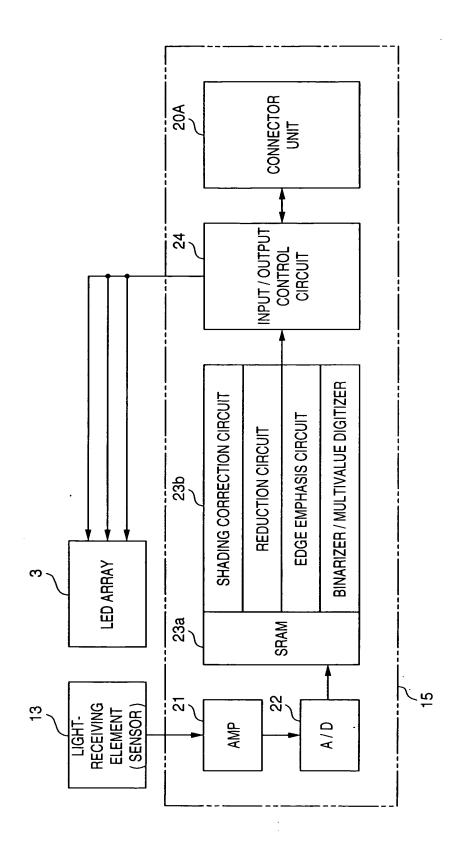


FIG. 4

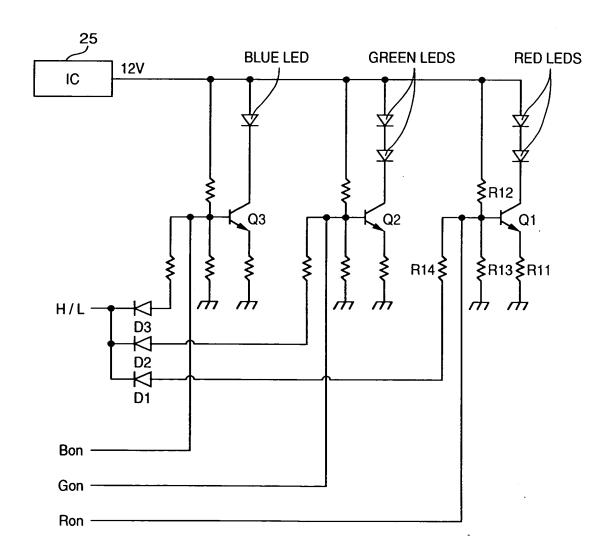


FIG. 5

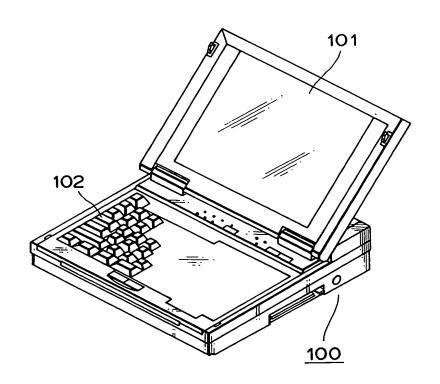


FIG. 6

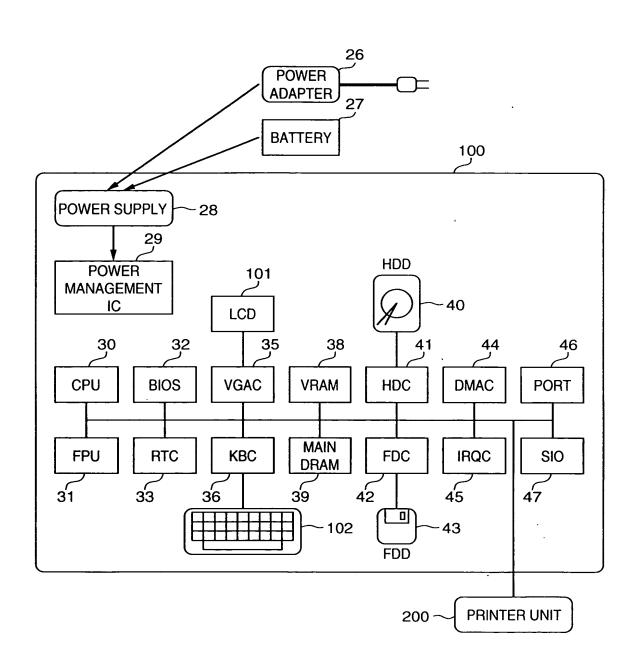
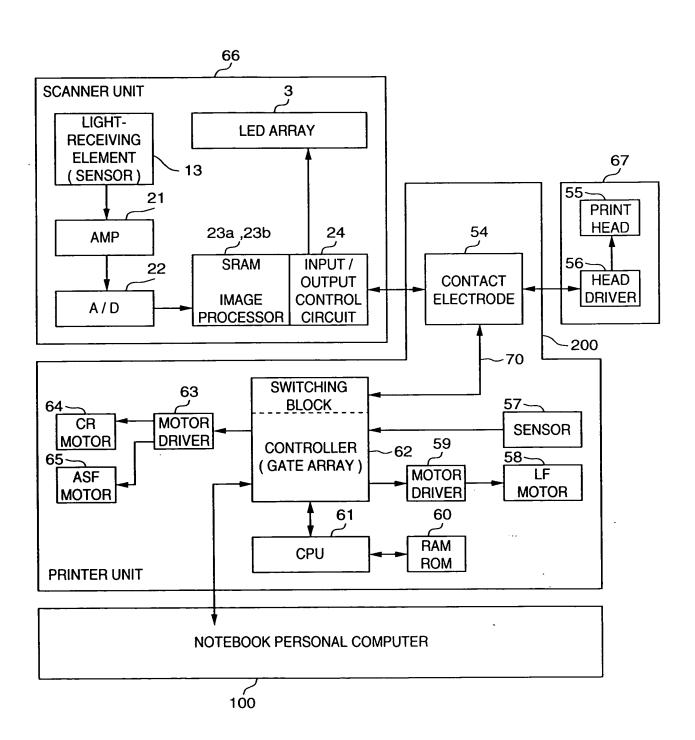
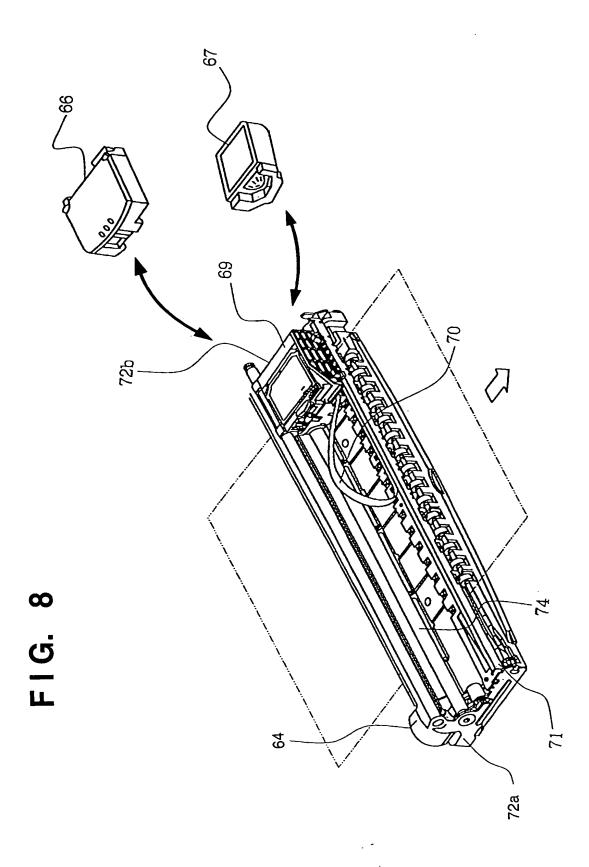
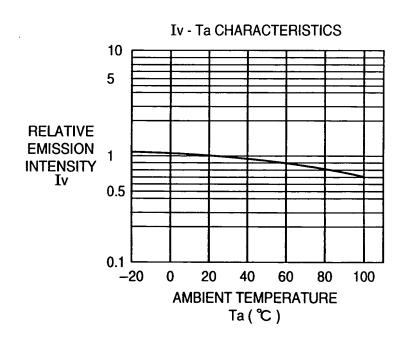
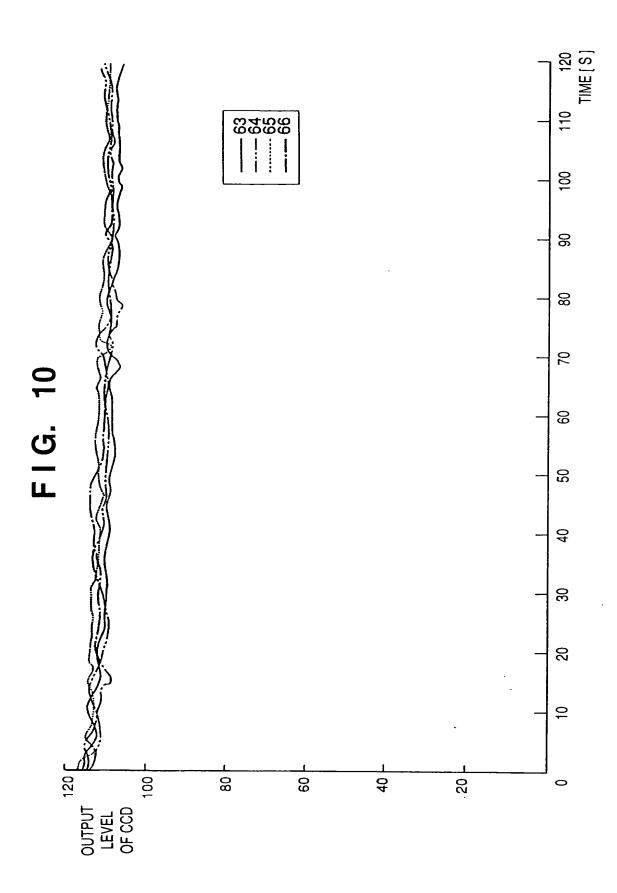


FIG. 7





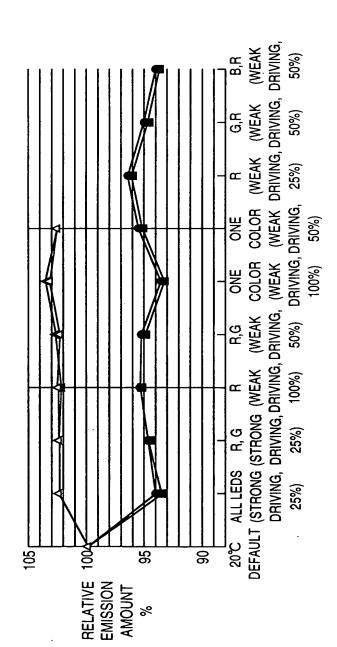




126 RED WHITE 167 BLUE WHITE 170 BLUE WHITE

109 RED WHITE

FIG. 11



#### FIG. 12A

**COLOR MODE** 

COLOTTWODE							
RESOLUTION	ACCUMU- LATION TIME	FORWARD msec	BACKWARD msec	ONE-LINE TIME msec	DOT WIDTH	NUMBER OF TIMES	A4 TIME msec
$360 \times 360  \mathrm{dpi}$	256µsec	3.9K	3.9K		64		
ØTR = 0 COLOR		863.4	863.4	1726.8		66	341906.4
							5'42"
180 × 180 dpi	320µsec	6.25K	6.25K		64		
$ \emptyset TR = 0 COLOR $		545.4	545.4	1090.8		66	215978.4
							3'36"
90 × 90 dpi	307μsec	6.51K	6.51K		64		
ØTR = 0 COLOR		523.6	523.6	1047.2		66	207345.6
							3'27"
$200 \times 360$ dpi	288µsec	6.25K	6.25K		64		
ØTR = 0 COLOR		545.4	545.4	1090.8		66	215978.4
							3'36"
300 × 360 dpi ØTR = 0 COLOR	307μsec	3.9K	3.9K		64		
		863.4	863.4	1726.8		66	341906.4
							5'42"

PAPER FEED TIME: 5 SEC

**SCAN AREA** 

**DELIVERY TIME: 1 SEC** 

HORIZONTAL: 203mm (8 inch) VERTICAL: 297mm (11.7 inch)

#### FIG. 12B

#### MONOCHROME MULTIVALUE MODE

RESOLUTION	ACCUMU- LATION TIME	FORWARD msec	BACKWARD msec	ONE-LINE TIME msec	DOT WIDTH	NUMBER OF TIMES	A4 TIME msec
$360 \times 360  \mathrm{dpi}$	256µsec	3.9K	3.9K		64		
ØTR = 0 MONO		863.4	863.4	1726.8		66	113968.8
							1'54"
180 × 180 dpi	320µsec	6.25K	6.25K		64		
ØTR = 0 MONO		545.4	545.4	1090.8		66	71992.8
,							1'12"
90 × 90 dpi	307µsec	6.51K	6.51K		64		
ØTR = 0 MONO		523.6	523.6	1047.2		66	69115.2
							1'09"
200 × 360 dpi	288µsec	6.25K	6.25K		64		
$ \emptyset TR = 0 MONO $		545.4	545.4	1090.8		66	71992.8
						_	1'12"
$300 \times 360 \text{ dpi}$ ØTR = 0 MONO	307μsec	3.9K	3.9K		64		
		863.4	863.4	1726.8		66	113968.8
							1'54"

PAPER FEED TIME: 5 SEC

SCAN AREA

**DELIVERY TIME: 1 SEC** 

HORIZONTAL: 203mm (8 inch) VERTICAL: 297mm (11.7 inch)

# FIG. 12C

#### MONOCHROME BINARY MODE

	T	<sub>7</sub>	<del>,</del>				
RESOLUTION	ACCUMU- LATION TIME	FORWARD msec	BACKWARD msec	ONE-LINE TIME msec	DOT	NUMBER OF TIMES	A4 TIME msec
360 × 360 dpi	256µsec	3.9K	3.9K		64		
ØTR = 0 MONO		863.4	863.4	1726.8		66	113968.8
							1'54"
180 × 180 dpi	320µsec	6.25K	6.25K		64		
$ \emptyset TR = 0 MONO $		545.4	545.4	1090.8		66	71992.8
							1'12"
90 × 90 dpi	307µsec	6.51K	6.51K		64		
ØTR = 0 MONO		523.6	523.6	1047.2		66	69115.2
,		:					1'09"
$200 \times 360$ dpi	288µsec	6.25K	6.25K		64		
ØTR = 0 MONO		545.4	545.4	1090.8		66	71992.8
							1'12"
$300 \times 360 \text{ dpi}$ $\emptyset \text{TR} = 0 \text{ MONO}$	307µsec	3.9K	3.9K		64		
		863.4	863.4	1726.8		66	113968.8
							1'54"

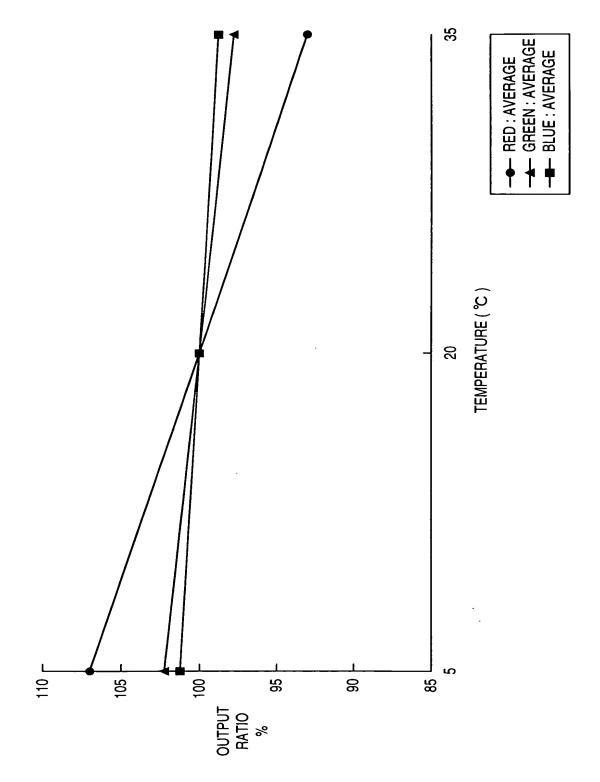
PAPER FEED TIME: 5 SEC

SCAN AREA

**DELIVERY TIME: 1 SEC** 

HORIZONTAL: 203mm (8 inch) VERTICAL: 297mm (11.7 inch)

FIG. 13



v. .\* y \*\*, .

#### **SCANNER UNIT**

WHITE DATA
( 10 bits × 128 dots )

GAIN DATA
( 8 bits )

BLACK DATA
( 8 bits × 128 dots )

HEAD ID
( 8 bits )

#### **PRINTER UNIT**

# RED ACCUMULATION TIME: 256 µs WHITE DATA (16 bits × 128 dots) GAIN DATA (8 bits) BLACK DATA (16 bits × 128 dots) HEAD ID (8 bits)

DATA FOR ACCUMULATION TIME: 320 µs

DATA FOR ACCUMULATION TIME: 307 µs

DATA FOR ACCUMULATION TIME : 288 µs

**DATA FOR GREEN** 

**DATA FOR BLUE** 

TEMPERATURE IN
APPARATUS IN OBTAINING
WHITE REFERENCE DATA
( 8 bits )

# NOTEBOOK PERSONAL COMPUTER

_	RED
l	ACCUMULATION
l	TIME : 256 μs
l	WHITE DATA
l	( 16 bits × 128 dots )
l	BLACK DATA
l	_ ( 16 bits × 128 dots )
l	GAIN DATA
l	( 8 bits )
l	HEAD ID
l	( 8 bits )
l	TEMPERATURE
	IN APPARATUS
	( 8 bits )
ı	

DATA FOR ACCUMULATION TIME : 320 µs

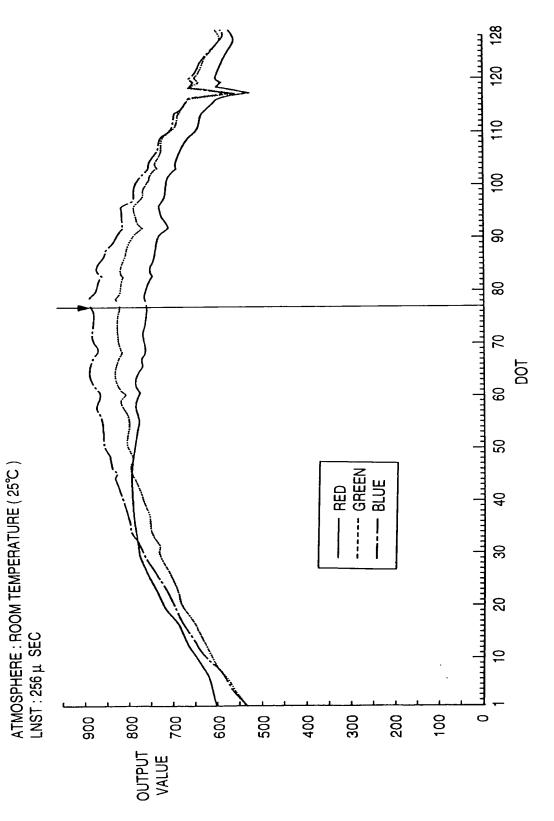
DATA FOR ACCUMULATION TIME: 307 µs

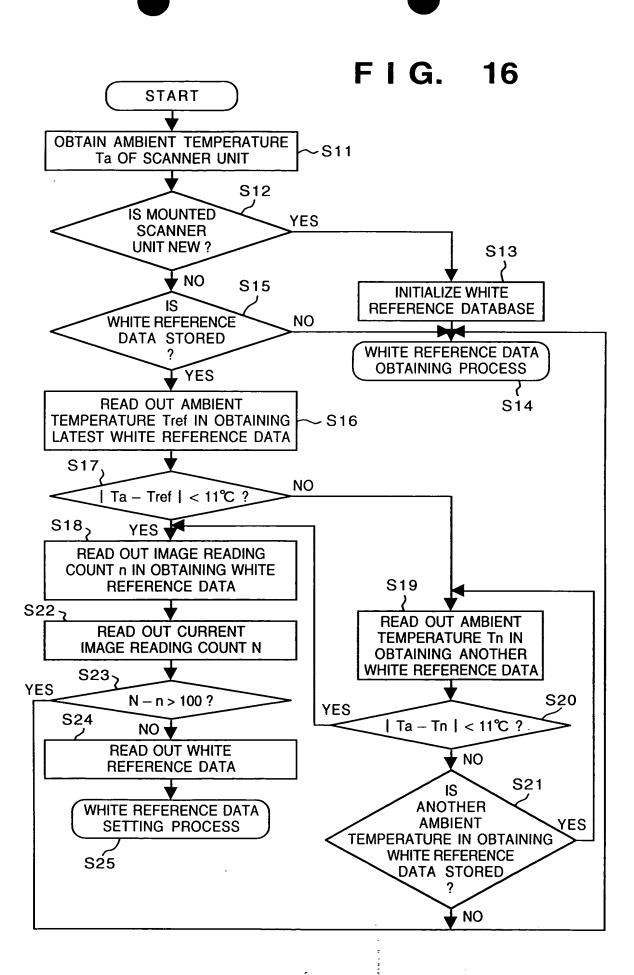
DATA FOR ACCUMULATION TIME : 288 µs

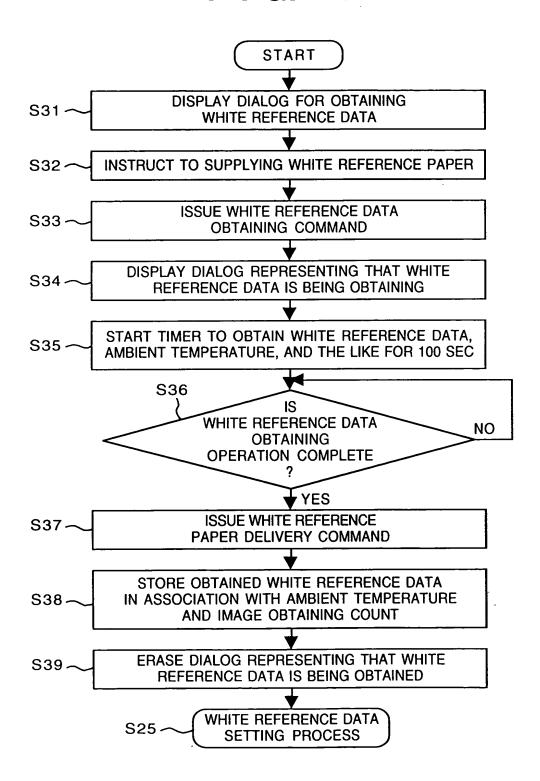
**DATA FOR GREEN** 

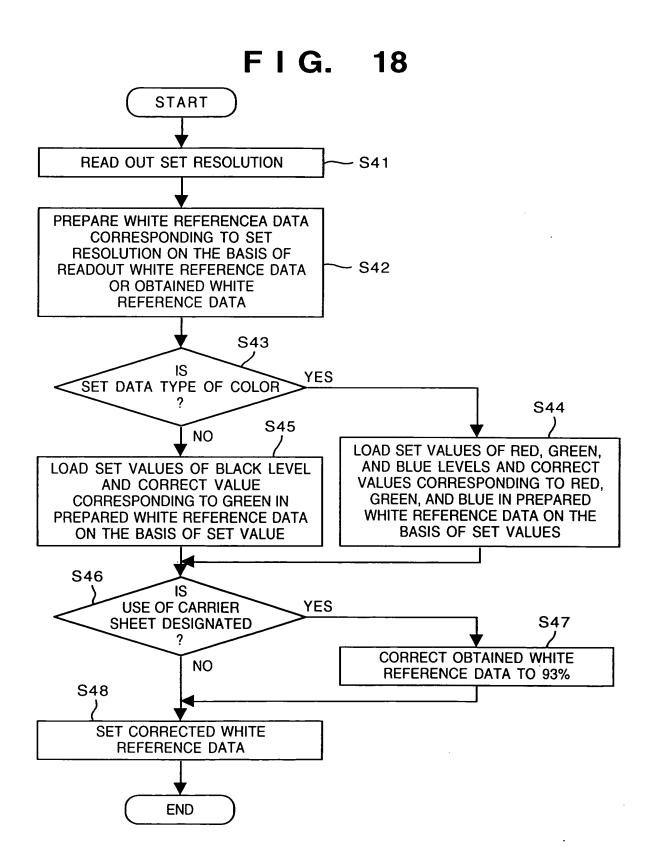
DATA FOR BLUE

FIG. 15









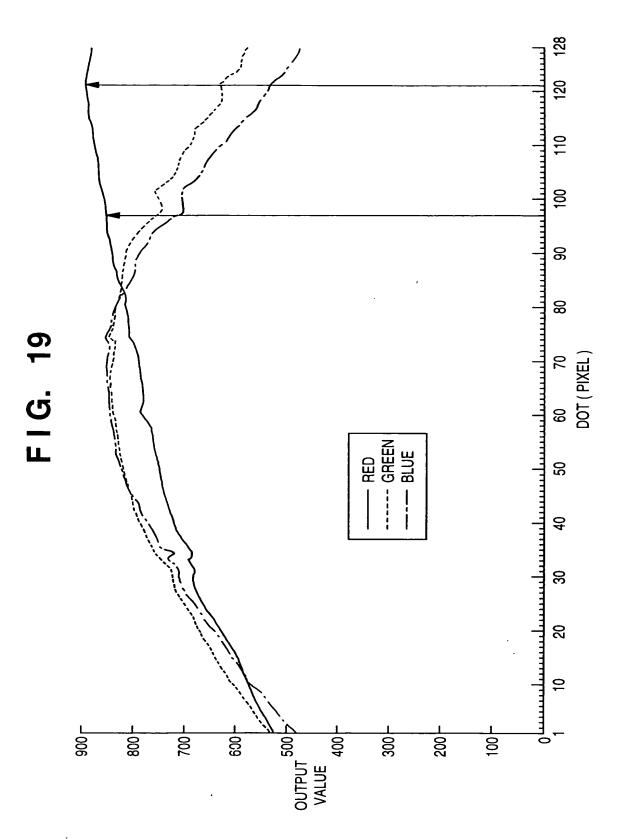


FIG. 20

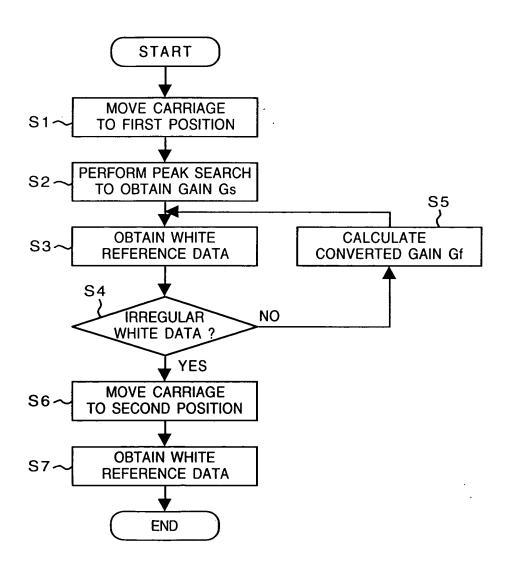
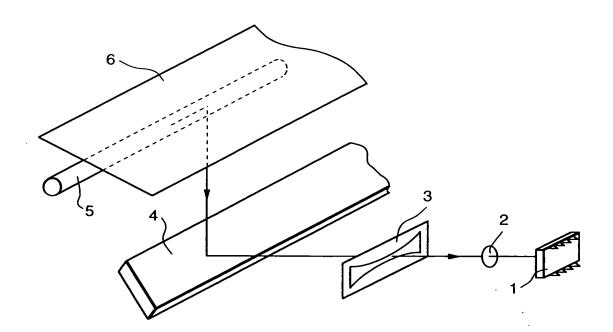


FIG. 21 (PRIOR ART)



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# FIG. 22A

0	WHITE REFERENCE DATA OBTAINING COUNT
1	TEMPERATURE IN OBTAINING FIRST REFERENCE DATA
2	TEMPERATURE IN OBTAINING SECOND REFERENCE DATA
_ 3	TEMPERATURE IN OBTAINING THIRD REFERENCE DATA
4	TEMPERATURE IN OBTAINING FOURTH REFERENCE DATA
_5	TEMPERATURE IN OBTAINING FIFTH REFERENCE DATA
6	
	SUPPLEMENTARY AREA
15	

# FIG. 22B

FIRST	FIRST WHITE REFERENCE DATA									
	TIME STAMP									
1	WHITE REFERENCE DATA FOR ACCUMULATION TIME OF 256 μs									
		WHIT	E REFER	ENCE [	DATA FOR R	ED				
			WHITE (	DATA 1	•••	1	WHITE D	ATA 128		
			<b>BLACK</b> I	DATA 1	•••		BLACK D	ATA 128		
			GAIN	SUPPL	<b>EMENTARY</b>	ID	TEMPE	RATURE		
		WHIT	E REFER	ENCE [	OATA FOR G	REEN				
		WHIT	E REFER	ENCE [	DATA FOR B	LUE		·		
	WHIT	E REF	ERENCE	DATA	FOR ACCUM	ULATIO	N TIME (	)F 320 μs		
	WHIT	E REF	ERENCE	DATA	FOR ACCUM	ULATIO	N TIME (	OF 307 μs		
	WHIT	E REF	ERENCE	DATA	FOR ACCUM	ULATIO	N TIME (	)F 288 μs		
	WHIT	E REF	ERENCE	DATA	OR ACCUM	ULATIO	N TIME (	OF 307 μs		
SECO	SECOND WHITE REFERENCE DATA									
THIRD WHITE REFERENCE DATA										
FOURTH WHITE REFERENCE DATA										
FIFTH	FIFTH WHITE REFERENCE DATA									
L										

COMMAND	COMMAND CONTENTS
PARAMETER	
1000H	PORT INITIALIZATION
3000H ~	LEFT OFFSET VALUE DESIGNATION
4000H	PRINT IMAGE TRANSFER
8000H ~	SCANNER READING COMMAND
9000H ~	FEED
9FF0H	DELIVERY
9FF1H	PAPER FEED
A700H	OPERATION FOR OBTAINING CURRENT HEAD TEMPERATURE
	AND TEMPERATURE IN APPARATUS
A801H	OPERATION FOR OBTAINING MOUNTED HEAD INFORMATION
A809H	OPERATION FOR OBTAINING MOUNTED HEAD ID
AD00H ~ AD7FH	OPERATION FOR OBTAINING WHITE REFERENCE DATA FOR EACH DOT
AD80H	OPERATION FOR OBTAINING HEAD ID IN OBTAINING
	WHITE REFERENCE DATA '
AD81H	OPERATION FOR OBTAINING TEMPERATURE IN
	OBTAINING WHITE REFERENCE DATA
ADE0H ~ ADE4H	ACCUMULATION TIME DESIGNATION
ADF0H	WHITE REFERENCE DATA OBTAINING DESIGNATION
ADF1H ~ ADF3H	R, G, AND B DESIGNATION
ADF8H	WHITE REFERENCE DATA DESIGNATION
ADF9H	OFFSET DESIGNATION
ADFAH	GAIN DESIGNATION
ADFBH	SUPPLEMENTARY
BD00H ~ BD7FH	WHITE REFERENCE DATA SETTING FOR EACH DOT
BD80H	HEAD ID SETTING
BD81H	TEMPERATURE SETTING
BDE0H ~ BDE4H	ACCUMULATION TIME SETTING
BDF0H	MONOCHROME DESIGNATION
BDF1H ~ BDF3H	R, G, AND B DESIGNATION
BDF8H	WHITE REFERENCE DATA DESIGNATION
BDF9H	OFFSET DESIGNATION
BDFAH	GAIN DESIGNATION
BDFBH	SUPPLEMENTARY
D000H	START OF HEAD EXCHANGE
D100H	END OF HEAD EXCHANGE

ADF0h GET DUMMY		_		TE REFERENCE DATA AINING DESIGNATION
ADE0h GET DUMMY	ADE4I	n  DUMMY		ACCUMULATION TIME DESIGNATION
ADF1h GET DUMM	ADF3h	ADF1h	ADF3h	COLOR
	GET DUMMY	GET DUMMY	GET DUMMY	DESIGNATION
ADF8h	ADF8h	ADF8h	ADF8h	WHITE REFERENCE DATA DESIGNATION
GET DUMM	GET DUMMY	GET DUMMY	GET DUMMY	
AD00h	AD00h	AD00h	AD00h	W1 OBTAINING
DATA GET	DATA GET	DATA GET	DATA GET	OPERATION
	[.			
AD7Fh DATA GET	AD7Fh	AD7Fh	AD7Fh	W128 OBTAINING
	DATA GET	DATA GET	DATA GET	OPERATION
ADF9h	ADF9h	ADF9h	ADF9h	OFFSET
GET DUMM	GET DUMMY	GET DUMMY	GET DUMMY	DESIGNATION
AD00h DATA GET	AD00h	AD00h	AD00h	W1 OBTAINING
	DATA GET	DATA GET	DATA GET	OPERATION
AD7Fh	AD7Fh	AD7Fh	AD7Fh	W128 OBTAINING
DATA GET	DATA GET	DATA GET	DATA GET	OPERATION
ADFAh	ADFAh	ADFAh	ADFAh	GAIN
GET DUMMY	GET DUMMY	GET DUMMY	GET DUMMY	DESIGNATION
AD00h	AD00h	AD00h	AD00h	W1 OBTAINING
DATA GET	DATA GET	DATA GET	DATA GET	OPERATION
ADF8h GET DUMM)	ADF8h GET DUMMY	ADF8h GET DUMMY	ADF8h GET DUMMY	
AD00h DATA GET	AD00h DATA GET	AD00h DATA GET	AD00h DATA GET	
AD80h DATA GET	AD80h DATA GET	AD80h DATA GET	AD80h DATA GET	HEAD ID OBTAINING OPERATION
AD81h DATA GET	AD81h DATA GET	AD81h DATA GET	AD81h DATA GET	TEMPERATURE OBTAINING OPERATION

BDE0h		BDE4h			ACCUMULATION TIME
DUMM	Y SET	DUMM	Y SET		SETTING
	BDF8h · · · · DUMMY SET	BDF8h DUMMY SET	BDF8h · · · · DUMMY SET	BDF8h DUMMY SET	WHITE REFERENCE DATA DESIGNATION
	BD00h	BD00h	BD00h	BD00h	W1 SETTING
	DATA SET	DATA SET	DATA SET	DATA SET	OPERATION
	BD7Fh	BD7Fh	BD7Fh	BD7Fh	W128 SETTING
	DATA SET	DATA SET	DATA SET	DATA SET	OPERATION
	BDF9h	BDF9h	BDF9h	BDF9h	OFFSET
	DUMMY SET	DUMMY SET	DUMMY SET	DUMMY SET	DESIGNATION
	BD00h   DATA SET	BD00h DATA SET	BD00h   DATA SET	BD00h     DATA SET	W1 SETTING OPERATION
	DATA SET	DATA SET	DATASET	DATA SET	OPERATION
	BD7Fh	BD7Fh	BD7Fh	BD7Fh	W128 SETTING
	DATA SET	DATA SET	DATA SET	DATA SET	OPERATION
	BDFAh DUMMY SET	BDFAh DUMMY SET	BDFAh DUMMY SET	BDFAh DUMMY SET	GAIN DESIGNATION
	BD00h	BD00h	BD00h	BD00h	W1 SETTING
	DATA SET	DATA SET	DATA SET	DATA SET	OPERATION
	BDFBh DUMMY SET	BDFBh  DUMMY SET	BDFBh DUMMY SET	BDFBh  DUMMY SET	
	BD00h DATA SET	BD00h DATA SET	BD00h DATA SET	BD00h DATA SET	
	BD80h DATA SET	BD80h DATA SET	BD80h DATA SET	BD80h DATA SET	HEAD ID SETTING OPERATION
	BD81h DATA SET	BD81h DATA SET	BD81h DATA SET	BD81h DATA SET	TEMPERATURE SETTING OPERATION
	BDF1h · · · · DUMMY SET	BDF3h DUMMY SET	BDF1h · · · · DUMMY SET	BDF3h DUMMY SET	COLOR DESIGNATION

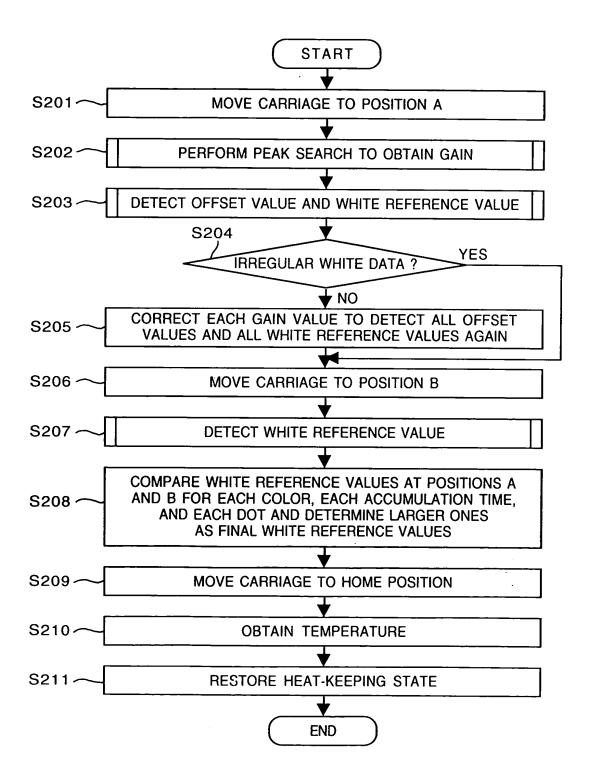


FIG. 27

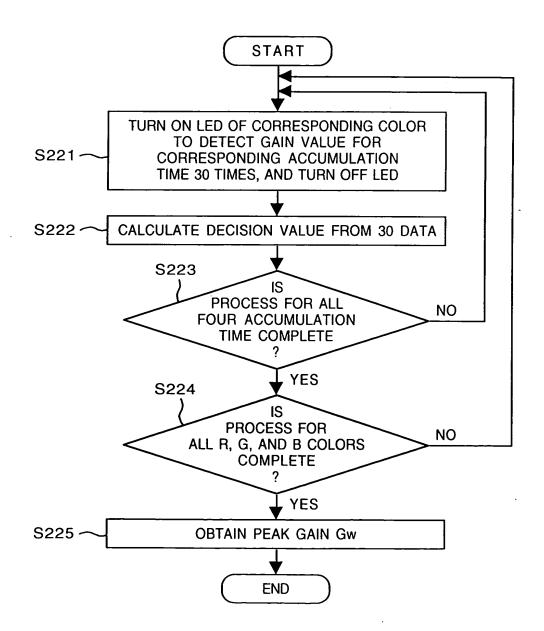


FIG. 28

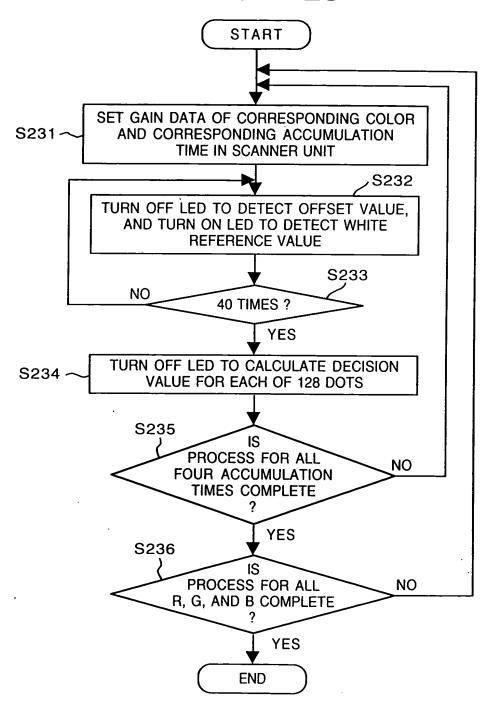
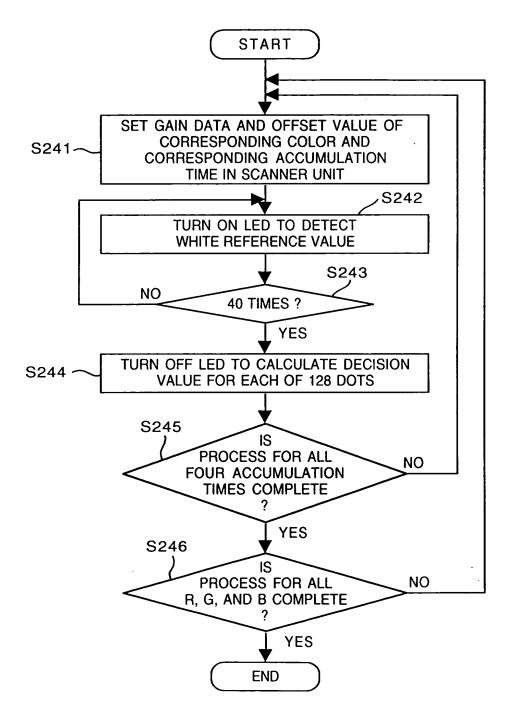


FIG. 29



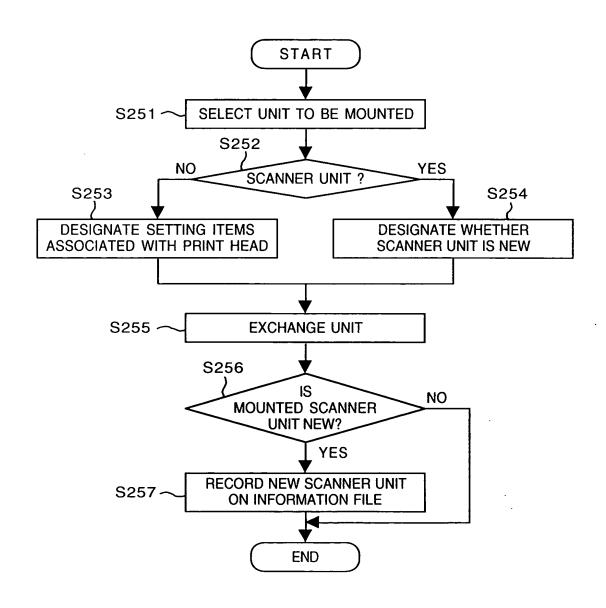
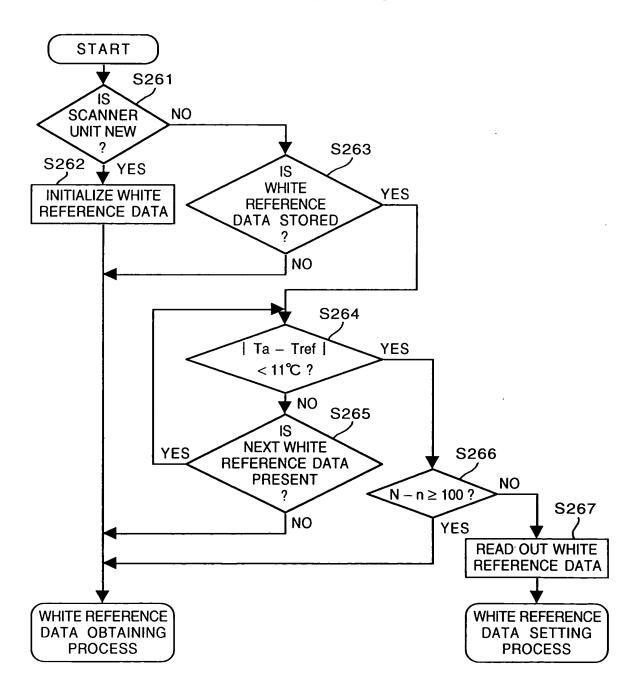


FIG. 31



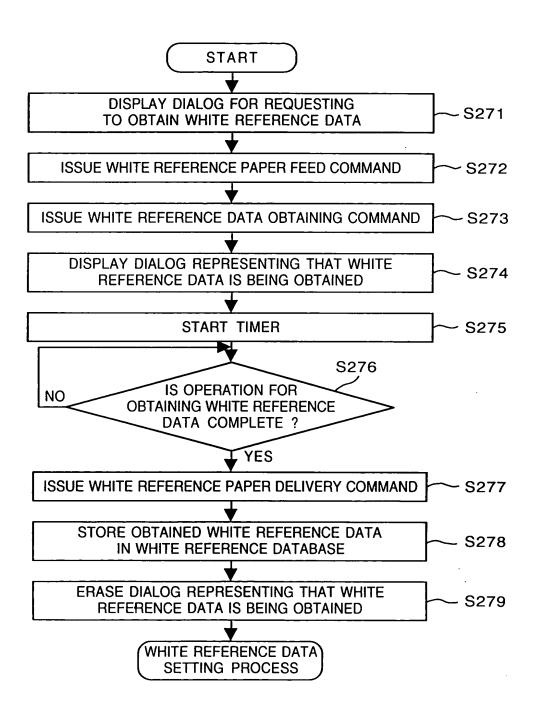


FIG. 33

